The changing nature of angel investing

Citation for published version:
Mason, C, Botelho, T & Harrison, R 2019, 'The changing nature of angel investing: Some research implications', *Venture Capital*, vol. 21, no. 2, pp. 177-194. https://doi.org/10.1080/13691066.2019.1612921

Digital Object Identifier (DOI):
10.1080/13691066.2019.1612921

Link:
Link to publication record in Edinburgh Research Explorer

Document Version:
Peer reviewed version

Published In:
Venture Capital

The changing nature of angel investing: some research implications

Colin Mason[1*], Tiago Botelho[2] and Richard Harrison[3]

[1] Adam Smith Business School, University of Glasgow, Scotland, UK; [2] Norwich Business School, University of East Anglia, Norwich, UK, [3] University of Edinburgh Business School, Edinburgh, Scotland, UK

Accepted 25th April 2019

* Contact: colin.mason@glasgow.ac.uk

ABSTRACT. The business angel market is changing. Business angels are increasingly investing as part of organised and managed angel groups alongside other angels rather than on their own. This development has significant implications for research, challenging the traditional definition of a business angel, changing the characteristics of investments made by business angels, and transforming the way in which the investment process occurs. It also challenges the ongoing relevance of the existing body of angel research that has been based on studies of individual angels investing on their own. The research community has been slow to react to this change. The paper identifies a number of methodological issues and research priorities.

Key words: business angels, angel groups, investment decision-making, follow-on investment

1. INTRODUCTION

Angel investing has been undergoing a transformation since the late 1990s from a largely invisible and atomistic market dominated by individual and small ad hoc groups of investors who strive to keep a low profile and rely on word-of-mouth for their investment opportunities to a more organised and visible market in which angel groups are becoming increasingly significant both in terms of total amount invested and size of investments - typically in the £250,000 to £500,000 range that were previously the prerogative of venture capital funds - and participating in much larger deals as co-investors in syndicated deals (Mason and Harrison, 2015; Mason et al, 2016). These groups are managed, professional in their operation (albeit to varying degrees), with established routines for accessing deals, screening deals, undertaking due diligence, negotiating and investing. Most use online platforms to manage the investment process. As Edelman et al (2017: 397) comment: "angel groups are changing the angel investment landscape."

Angel groups operate by aggregating the investment capacity of individual high net worth individuals (HNWIs). Some groups are member-managed while others are manager-led. This individual is often termed the 'gatekeeper' (Paul and Whittam, 2010). Their key roles are to undertake the initial screening of investment opportunities and to manage investor engagement. Groups have a limited and selective membership of angels (typically 20-75 members but some have over 100 members). There are a variety of organisational models. In one common model - the 'dinner club' model – members meet regularly to hear pitches by entrepreneurs who have been pre-screened by the group's management team. Another is the 'core-periphery' model which consists of a tight inner circle of lead investors who provide the central decision-making function alongside the 'gatekeeper' and lead the group's investments, and a larger, outer ring of semi-passive investors who are given the opportunity to invest alongside these lead investors. Another model involves the coalescing of members around an experienced angel who takes the lead role in an investment. Kerr et al (2014) describe the investment model of Tech Coast Angels, a well-known angel group in southern California. Some larger groups – such as Tech Coast Angels, Keiretsu and Go Beyond - operate on a Chapter model basis. In this model groups operate in several locations, in some cases in more than one country, under the same brand management, but each has its own gatekeeper, use standard procedures for generating deal flow, screening and due diligence, and run common training sessions, seminars and other events which build collaborate social relationships between members across the group.

This changing nature of angel investing has fundamental implications for angel research. As recent reviews show (White and Dumay, 2017; Drover et al, 2017; Edelman et al, 2017; Wallermoth et al, 2018; Tenca et al, 2018), the research that has been produced over the past four decades on which our understanding of angel investing is based derives from studies of solo angels operating independently and below the radar. But with the emergence of group investing this established knowledge base may no longer be relevant. For example, it is not clear whether angels who are members of angel groups are distinctive in terms of their characteristics or investment practices from solo angels. Furthermore, despite the growing importance and sophistication of angel groups as providers of capital, there is very little evidence on the impact that group membership has on the investment process of individual angels (Bonini et al 2018: 593). Research has been slow to respond to the changing nature of angel investing (Edelman et al, 2017; Tenca et al, 2018). For example, in their review of 148 journal papers on business angels published between 1981 and 2015, Tenca et al (2018) identify just two papers on angel networks or groups. The literature on angel groups comprises a handful of case studies (mainly written by practitioners) (e.g. May and Simmons, 2001; May, 2002; Cerullo and Sommer, 2002; Payne and Mccarty, 2002; May and O'Halloran, 2003) and just a few scholarly studies (Sudek, 2006; Becker-Blease and Sohl, 2011; Gregson et al 2013; Carpentier and Suret, 2015; Mason et al, 2016; Croce et al, 2017) and some general discussions (Mason, 2006; Sohl, 2007; 2012).

In this paper we reflect on the implications of the emergence of angel groups for research on business angels in this new era of organised angel investing. We start by considering the implications for how business angels are defined. This is followed by a discussion of data sources. We then discuss the ways in which the investment decision-making process of angel groups differs to that of individual angels. Individuals still generally make their own investment decisions as members of angel groups but in the context of the group's operating and decision making procedures and hence are potentially influenced by the gatekeeper and other group members. A key distinction between solo angels and angel groups is that a significant proportion of the investments made by angel groups are follow-on investments (Mason et al, 2016; Mason, 2019). This follow-on investment decision – which is likely to be distinctive from the initial investment decision, not least because information asymmetries are reduced - has not been studied in an angel context. We consider how the post-investment stage differs between individual angels and angel groups. Finally, we suggest that the emergence of angel groups has implications for the funding escalator model of entrepreneurial finance.

2. THE EMERGENCE OF ANGEL GROUPS: SCALE AND DRIVERS

The Band of Angels, which was founded in Silicon Valley in 1995, is generally – but inaccurately - regarded as the first organised group to be formed. Others, such as Tech Coast Angels (1997), Sierra Angels (1997), Common Angels (1997) and The Dinner Club (1999), soon followed (Preston 2007). Archangel Investors, located in Edinburgh, Scotland, was founded in 1992, and so is older than these better-known US groups (Kemp et al, 2017). Between 1996 and 2006 the number of identifiable business angel groups in the US grew from 10 to over 250 (Preston 2007). The Angel Capital Association, covering the USA and Canada, was created in 2003 for the purposes of knowledge sharing and transfer of best practice, research and data collection and representation of the angel community with policy-makers. ACA currently has more than 400 angel groups in its database.[1] There has been a similar expansion in the angel market in Europe. The UK Business Angel Association (UKBAA) has 49 angel groups as members.[2] There are now examples of angel groups throughout the world (May and Liu, 2015; Lo, 2016; Harrison, 2017). There is also evidence of the specialisation of groups by industry sector (e.g. health care, clean tech), type of investor (e.g. women-only angel groups) and affiliation (e.g. university-based groups).

The emergence of angel groups reflects the need for greater financial resources to make larger investments, including follow-on investments. Individual angels are rarely involved in making follow-on investments. Traditionally, companies that have exhausted their angel investment have had to seek further finance from venture capital funds. However, this puts angels in a vulnerable position, notably to dilution, on account of the different investment instruments used by venture capital funds. This is exacerbated by their inability to make follow-on investments. This vulnerability was painfully exposed during the dot.com crash era of the early 2000s when angels, as initial investors, were subject to down-rounds, cram-downs and write-offs of the investments that they had made in the dot.com boom at over-inflated values at the hands of venture capital funds. As a

[1] https://www.angelcapitalassociation.org/faqs/
[2] The UKBAA has 160 members including accelerators and incubators, crowdfunding platforms, professional advisory firms, early stage venture capital firms as well as angel groups and individual angels.

consequence, many angels have sought to avoid investing alongside venture capitalists (GP Capital, 2004; Mason, 2007). Moreover, the ability of individual angels to pass on their investee businesses to venture capital funds to make follow-on investments has declined as venture capitalists have shifted their focus to larger investments. The outcome is that angels have recognised the need to band together to create the 'deep pockets' needed to make both sizeable initial investments and follow-on investments. In some specific contexts, such as Scotland (Harrison et al 2010; Gregson et al, 2013; Harrison 2017), policy-makers have sought to encourage the creation of angel groups, for example through specialist support agencies and the creation of co-investment funds, as means of addressing gaps in the supply of scale-up capital.

Angel groups are also attractive to individual investors by enabling them to achieve more diversified investment portfolios (i.e. investing, say, £100,000 across five businesses alongside other investors rather than investing it in one business as a solo investor.) Gregson et al (2017) highlight the need for angels to make multiple investments in view of the high risk of such investments: their analysis demonstrates that "portfolios with more than 50 investments are required to significantly minimize risk of poor returns. … Similar scale is [also] required to maximize returns potential, as smaller portfolios also have a lower average IRR". Other benefits from joining angel groups include superior deal flow, enabling individual angels to invest in particular opportunities that they could never have invested in on their own, learning from other investors, providing more effective post-investment support, improving their own investment skills and social benefits from opportunities for camaraderie with like-minded individuals.

The emergence of angel groups is regarded as beneficial to the entrepreneurial ecosystem. First, they reduce search costs for both angels and entrepreneurs. Because of the fragmented nature of the angel market and the invisibility of angels there was no mechanism for them to receive a steady flow of investment opportunities. Instead, they found their deals by chance or through their own, often limited, social networks. The entrepreneur's search for angel finance was equally a hit-or-miss affair. As a consequence, investors and entrepreneurs both incurred high search costs. This prompted many to drop out of the market as either suppliers or seekers of finance (Wetzel, 1981). Angel groups, in contrast, are generally visible and so entrepreneurs are able to approach them directly. A further source of inefficiency was that each investment made by an investor has typically been a one-off that was screened, evaluated and negotiated separately. Angel groups have been able to develop efficient routines for handling investment enquiries and screening opportunities and have developed standardized investment documents. Angel groups are also more focused on achieving exits than are most individual angels (Kerr et al, 2014 – but see Mason and Botelho, 2016, for contrary evidence)

Second, angel groups have stimulated the supply-side of the market. As well as being attractive to active angels they also offer considerable attractions for high net worth individuals (HNWIs) who want to invest in emerging companies but lack the time, referral sources, investment skills or the ability to add value to be able to invest on their own. . Without the opportunity to invest in emerging companies these investors will invest in other asset classes (e.g. stocks, bonds and other investment products, property) (Mason and Harrison, 2000). Moreover, such investments are likely to involve money being exported from local and regional economies whereas business angels typically invest locally (Avdeitchikova, 2009; Harrison, et al, 2010). Moreover, angels who are members of angel groups invest a higher proportion of their wealth than those who are not (Bonini et al, 2018).

Third, the ability of angel groups to add value to their investments is also much greater. The range of business expertise that is found amongst angel syndicate members means that in most circumstances they are able to contribute much greater value-added to investee businesses than that of an individual business angels, or even most early stage venture capital funds. Both Kerr et al (2014) and Lerner et al (2018) report that angel groups enhance the outcomes and performance of the firms in which they invest.

Fourth, angel groups have become important investment partners with governments. In recent years Government intervention in the venture capital market has shifted from direct investment to models that involve collaborating with private investors, both to leverage their expertise and to eliminate the overhead costs of running their own investment funds (Murray, 2007; Jääskeläinen and Murray, 2007). One example is the creation by government of co-investment funds which invest alongside business angel groups, and in some cases early stage venture capital funds, matching their investment on a one-to-one basis, typically on a *parri passu* basis, to address the early stage funding gaps (Malcolm Watson Consulting, 2016; Owen and Mason, 2017; Harrison, 2017).

3. DEFINITIONAL ISSUES – WHO IS A BUSINESS ANGEL?

Angel research suffers from definitional ambiguity and confusion (Mason and Harrison, 2008; Mason, 2016). The emergence of angel groups has added to this. A key source of this ambiguity is that the terms ‘angels’ and ‘informal investors’ have often been used interchangeably. However, they are not the same. The Global Entrepreneurship Monitor (GEM), for example, defines informal investors much more broadly to include investments from family, friends, acquaintances as well as ‘strangers’. The term ‘angel’ defines high net worth individuals who make their own investment decision, invest their own money, along with their time and expertise, directly in businesses in which they have no family connection, and, after making the investment, generally takes an active involvement in the business, for example, as an advisor or member of the board of directors (Mason, 2006). Definitional issues arise because some angel groups are structured in such a way that they attract new types of investors who play a much more passive role and hence do not meet these criteria. Specifically, they may not be actively involved in the investment decision-making process and they may not be a hands-on investors. Hence, paradoxically, it should not be assumed that all of the members of every angel groups actually meet the conventional definition of an angel investor.

Further confusion arises on account of the various terms that have been used for collective forms of angel investing. These include groups, networks, portals, syndicates and associations. We use the term 'angel group' which we define as a consortium of individual angels who collaborate to manage deal flow and process deals together but make their own individual investment decisions. This point is critical: angel groups are not pooled investment vehicles.[3] Management may be hired or provided by the group themselves, often as volunteers. Larger groups also have their own administrative staff. Angel groups operate with differing levels of formality and structure but all have an identity and name and most have a web presence (web site, Twitter, Facebook, blogs, etc). 'Network' has generally been used as shorthand for 'business angel networks' (also termed as 'business introduction services'), organisations that operate as mechanisms that connect investors with entrepreneurs seeking finance (Harrison and Mason, 1996). Bonini et al (2018) contrast networks with groups: compared to groups, networks have less stringent obligations and engagement rules on its members and provide

[3] However, some angel groups have established investment funds alongside their direct investment activity (e.g. London Business Angels: https://investment.newable.co.uk/)

little or no organised processing of investment opportunities, with individual members responsible for finding their own co-investors with whom they can share the due diligence, undertaking their own negotiations and producing their own term sheet. Sohl (2007) used the term 'portal', which carries an implication of on-line activity (an early example of which was the Small Business Adminstration's ACE-Net electronic angel/entrepreneur matching service launched in 1996: Acs and Tarpley, 1997; other examples include Angel List (USA), Angel Investment Network, Angel's Den and London Business Angels (all UK based)). 'Syndicates' refers to deals in which several independent investors come together to invest together in a specific company. 'Associations' is the term for a member organisation of angel groups (such as ACA, NACO, EBAN and UKBAA)[4]. Typically the membership of these organisations has extended beyond angel groups to include early stage venture capital funds, business accelerators, electronic funding platforms (including crowdfunding platforms) and other early stage market players (e.g. law firms) (see note 2).

4. DATA

The emergence of angel groups is widely thought to overcome the data challenges that have traditionally confronted research because of their public profile and the visibility of their investments, in contrast to the invisibility of the vast majority of solo business angels and their investments. We argue that this is not necessarily the case, with an over-reliance on data from angel groups creating potential new sources of bias in angel research.

4.1 Sampling issues

[4] ACA – Angel Capital Association; NACO – National Angel Capital Association (of Canada), EBAN – European Business Angel Network; UKBAA – United Kingdom Business Angel Association.

The invisible nature of business angel investing has created challenges for researchers, resulting in the use of ad hoc, convenience samples (Mason and Harrison, 2008; Mason, 2016). Angels who are members of groups are at least semi-visible to researchers (although may need the co-operation of gatekeepers to access them) and so offer a 'sample of convenience'. As a consequence, several recent studies have drawn their samples of angels from the membership of angel groups, and in some cases from just one angel group. (e.g. Mitteness et al, 2012a; 2012b; 2016; Kerr et al, 2014; Murnieks et al, 2015; Lerner et al, 2015; Carpentier and Suret, 2015; Cardon et al, 2018) But this begs the question whether angels who join angel groups are 'distinctive'? If so, then it may be problematic to extrapolate the findings from such studies to the entire angel market or to make comparisons with prior research based on solo angels. There is evidence that younger angels are more likely to join angel groups when they start investing whereas older angels - because there were fewer angel groups when they started their investing career - have only subsequently joined angel groups (Botelho, 2017). Moreover, excluding those who join women-only angel groups, women are somewhat less likely than men to be members of angel groups (Harrison et al, 2018). The generalisability of studies that are based on angels from a single angel group is particularly problematic on account of the heterogeneity of groups, with several that focus on distinct communities and have particular investment foci.

A further concern arises from the use of snowball sampling which has been a common methodology to overcome the invisibility of business angels (Mason, 2016). As snowball surveys are based on the networks of an initial sample they may simply produce samples that are dominated by angels from the same group (and hence several individual respondents may be reporting on the same investments). Hence, whereas the visibility of angels that has resulted from the emergence of angel groups might be seen as being beneficial to researchers, if those angels who are members of groups are distinctive then it may not be legitimate to generalise the findings to the overall market, or even beyond the specific group context.

4.2 Data issues

A further apparent benefit for researchers arising from the emergence of angel groups is that their investments are now captured by various investment databases, such as Crunchbase, Pitchbook, CB Insights, Owler and Beauhurst. This enables researchers to undertake quantitative analysis of angel investing in a similar way to how venture capital fund investments have been analysed (e.g. Block et al, 2018; Croce et al, 2018), but yet again the limited coverage of this data raises concerns of biased coverage. For example, only 17 of the 21 Scottish angel groups listed on the LINC Scotland web site are included in the Crunchbase database. More signficantly, the coverage of their investments is patchy. For example, Archangels a major Scottish angel group, has made 83 investments to 31 March 2017 (Kemp et al, 2017) whereas Crunchbase reports only 39 investments to November 2018. Discovery Investment Fund, another Scottish angel group, lists nine investments in its portfolio whereas Crunchbase lists only one investment.

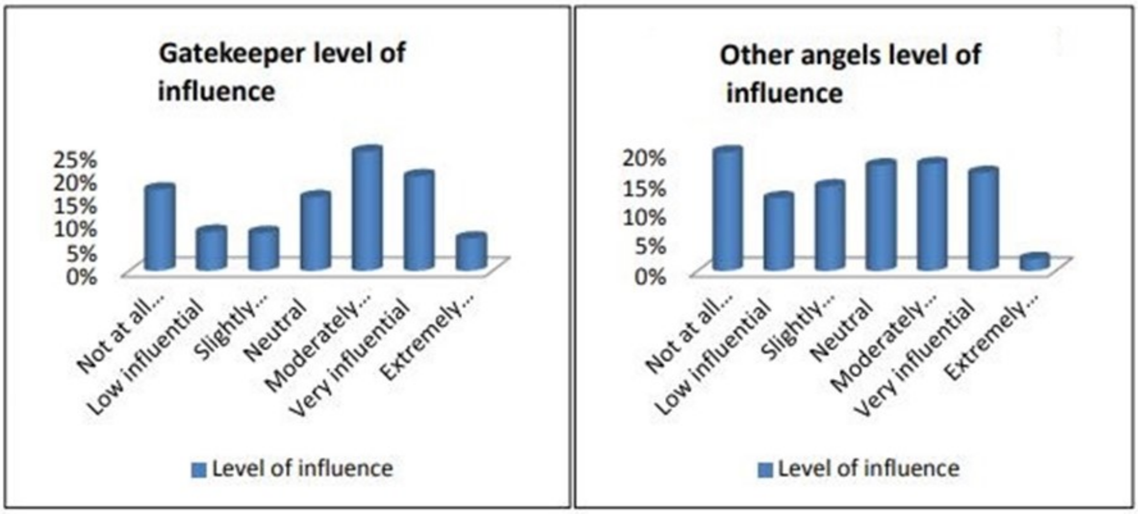
5. THE INVESTMENT DECISION-MAKING PROCESS

Business angel groups have transformed the investment process. Research on how business angels make their investment decisions has identified various stages that are undertaken sequentially: (i) awareness of the investment opportunity; (ii) investor-specific screen, (iii) generic screening, (iv) detailed evaluation, (v) contract stage, (vi) closing, (vii) post-investment support, (viii) exit (Mason and Botelho, 2018). Solo angels undertake all of these stages themselves. However, the creation of angel groups has resulted in the emergence of a new actor – the group manager or ‘gatekeeper’ (Paul and Whittam, 2010). Their role varies between groups but primarily they perform two functions. First, they perform external-facing roles, notably promoting the group and attracting deal flow. Second, they normally undertake the initial screening of investment opportunities. The individual group members then consider these pre-screened deals in more detail.

There is considerable research on the investment screening stage (see reviews by Edelman et al, 2017 and Tenca et al, 2018). The process is rather different in angel groups where the gatekeeper normally undertakes the initial screening on behalf of the individual angels who are members of the groups. The question that arises from the involvement of gatekeepers is whether they perform the screening performance differently to that of solo angels. An initial study suggests that there are differences (Mason and Botelho, 2017). First, gatekeepers are slower to say 'no'. They spend longer than solo angels on the screening. Second, their screening is less personalized. Personal – often idiosyncratic – issues are prominent in the screening by individual angels (Harrison and Mason 2017). In contrast, the gatekeepers place considerable emphasis on the group's investment criteria – these are typically few in number and dominated by industry sector, the size of the investment and the likelihood of future funding rounds being required. Within these constraints they are open to considering a wide range of opportunities, not least because of the collective expertise of the group that they can draw upon and their wide range of experience. Third, gatekeepers give considerably greater emphasis to the financial aspects of the proposal, not just in terms of the frequency of comments but also in terms of the issues raised, notably valuation, the need for future funding rounds and returns. Those entrepreneurs whose opportunities pass the gatekeeper's screening might then be invited to pitch to the group. Fourth, those opportunities that attract sufficient interest from investors will then be subject to due diligence that is typically undertaken by a small group of angels.

Another way in which the emergence of angel groups has changed the investment decision-making process is that it provides individual angels with much greater exposure to the insights and opinions of others. This includes group interactions, the influence of other members of the group and the influence of gatekeeper (Figure 1). However, “people who interact with each other regularly tend to think and behave similarly” (Shiller, 1995). The growth of angel groups could therefore be leading to the emergence of a ‘community of practice’ (Lave and Wenger, 1991) – a collection of practitioners who engage on an ongoing basis in the pursuit of some common endeavour. This ongoing engagement results in shared thinking and the development of a repertoire of ideas, ways of doing and resources – experiences, stories, tools, ways of addressing recurring problems – and practices that are shared to a greater or lesser extent across members (Wenger, 2000). This, in turn, could result in a growing standardisation of investment assessment (Mason et al, 2017).

Figure 1.Influences of gatekeeper and other investors on the investment decisions of individual angels (source: Mason and Botelho, 2014)



Note: response to question “to what extent was your investment decision influenced by ...” Individuals responded on up to three of their investments.

There is emerging evidence that membership of an angel group has a discernible effect of the investment decision-making of individual angels. Botelho (2017) concludes that membership of an angel group "is a discriminatory factor in decision-making cluster studies". Specifically, angels who are members of angel groups make more investments than solo angels, their investments exhibit greater diversity, there is less consistency in their decision-making criteria and they exhibit greater learning effects. Bonini et al (2018) find that business angels who are members of angel groups have different investment practices compared with those who are not.

Turning to later stages in the investment process, valuation and contracting have attracted very little research. As a consequence, there is no information on whether angel groups take a different approach to valuation than individual angels, whether they have different (more formal) contacts and contracts, and the types of investment instruments used.

Angels are generally patient investors, although this is generally by default rather than intention (Harrison et al, 2016), reflecting the fact that most angels do not adopt an exit-centric approach to investing (Mason et al, 2015). It might be expected that angel groups would take a more professional approach to investing which would involve being more exit-centric. Surprisingly, this assumption is challenged by the limited evidence available which indicates that most angel group gatekeepers are not any more exit-centric than solo angels (Mason and Botelho, 2016).

6. FOLLOW-ON INVESTMENT

Another way in which the emergence of angel groups has fundamentally changed the nature of angel investing is their greater financial capacity which enables them to make follow-on investment decisions. Indeed, as groups mature an increasing proportion of their investments are accounted for by follow-on investments (Mason, 2019). Evidence from Scotland – where most of the angel groups are now mature - indicates that between 60% and 80% of angel group investments are follow-on (Mason and Harrison, 2015; Mason et al, 2016). These investments are critical in enabling its portfolio companies to scale. The follow-on investment decision has not been a focus for research. Surprisingly, this topic has also attracted very limited attention in the much larger venture capital literature (McCarthy et al, 1993; Birmingham et al, 2003; Guler, 2007; Devigne et al, 2016), despite its frequency. However, it is fundamentally different from the initial investment decision From an escalation of commitment perspective (Staw, 1976), once decision-makers make an initial decision to invest in a company the tendency is for them to become very committed and ignore subsequent information, particularly negative information when making a further decision to deepen the commitment. This has been identified in VC investing (Birmingham et al, 2013; Devigne et al, 2016).

Business angels might be expected to be particularly susceptible to the escalation of commitment because of the patient nature of their investments, relationship approach with the entrepreneur and their 'committed faith' in the entrepreneur and business that goes back to the circumstances of the initial investment, normally at the start-up stage when tangible evidence was usually lacking (Gregson et al, 2013). Key questions include the following. How is the follow-on investment decision initiated and by whom? What are the investment criteria – how have they changed from the initial investment decision: is the 'jockey' (i.e. entrepreneur) still critical, or has the 'horse' (i.e. business attributes) become more significant (Mitteness et al, 2012a; Harrison and Mason, 2017)? How often and in what circumstances is a 'no' decision made? How does the prior relationship influence – for good or bad – the follow-on investment decision? And what biases and heuristics underlie the follow-on decision process (Harrison et al, 2015)? Can we identify individual characteristics linked to escalation of commitment? And are angel groups more likely to invest alongside other investors in a follow-on round?

A key consequence of the growth of follow-on investments is that it undermines the traditional ‘funding escalator” that dominated the era of solo angels. Benjamin and Margulis (1996: 71) describe this relationship as follows: “It boils down to this. Angel investment runs the critical first leg of the relay race, passing the baton to venture capital only after a company has begun to fund its stride. Venture capitalists focus ... on expansion and later stages of development, when their contribution is most effective.” Several studies provide empirical confirmation of this relationship (Freear and Wetzel 1989; 1990; Harrison and Mason, 2000; Madill et al, 2005). For example, Freer and Wetzel (1990) who observed that “[angels] and venture capital funds play complementary rather than competing roles in the financing of NTBFs”, with angels investing earlier and smaller amounts than venture capital firms. However, Hellman et al (2017) find little evidence that businesses financed either by individual angels or angel groups go on to raise venture capital.

It has been suggested that a new pattern of funding is emerging (Mason, 2018). Angel groups are typically not involved at the pre-start up and seed stages because they have a minimum size of investment below which it is uneconomic for them to invest. New sources of seed finance have emerged, notably accelerators and incubators as well as crowdfunding, to invest in pre-start and start-ups. Angel groups invest at the next stage, typically co-investing with other investors, including other angel groups and public sector co-investment funds, to provide their investee businesses with sufficient financial runway to grow and exit. Only businesses with significant financial needs would go on to raise further finance from venture capital funds. However, in some cases a round of venture capital might be raised prior to the exit, capitalising on their greater expertise in achieving exits. The outcome is a bifurcation of the risk capital market, with angel groups now increasingly the only source of funding for new and emerging businesses seeking investments in the range £250,000 to £1 million (up to $1m in the USA: Sohl, 2012). One of the key research issues that arises from this new model of entrepreneurial finance is to understand the interactions between business angel groups and other investors, notably equity crowdfunding platforms (Wallmeroth et al, 2018), both those seed investors who have invested prior to the angel group's investment and also those making follow-on investments.

7. POST-INVESTMENT ROLES

A key feature of business angels is that they provide 'smart' money, using their human and social to support their investee companies in a variety of informal and formal roles, including advice, mentoring and networking, as well performing specific functional roles and board members or chair of the board (Politis, 2008; 2016). In the angel group context several angels will have invested in a business. This raises various questions. Who undertakes these value-added roles? Is it just one investor, and if so, how is this investor selected? Or do several group members contribute to hands-on activity? If multiple angels do invest then this has implications for the study of angel-entrepreneur relationships, which typically adopt a dyadic focus. If the group's hands-on role is limited to a core group of angels, does this create band-width issues, which either limits their investment capacity or their ability to add value? Linking back to an earlier point on the types of individuals that angel groups attract, are all members of angel groups equally capable of adding value? Or, is it the case that angel groups simply attract "inexperienced wealthy individuals seeking a passive investment rather than active angels who can contribute value added to their investee businesses" (Sohl 2007)? How does the hands-on contribution of angel groups compare with than of individual angels? And do different models of angel group influence the type of value-added contribution?

8. CONCLUSION

The world that scholars study is dynamic. Too often researchers are slow to recognise change and adjust their research focus accordingly. The consequence is that the current stock of knowledge becomes increasingly divorced from the way in which practice is evolving. This is what is happening in business angel research. The knowledge base that has been built up over the past 40 years reflects almost entirely the study of individual angels who, for most of this period, operated below the radar, investing on their own or informally with a few friends and business associates, making their own investment decisions, investing small amounts of money per investment, drawing upon their own entrepreneurial experience to support their investee businesses, and adopting a fairly passive approach to an exit. However, the way in which angel investing has changed. Part of the angel market is now visible, and more structured and institutionalised, occurring through managed angel groups. This changes the nature of the supply of entrepreneurial finance, challenges the traditional definition of an angel investor, and changes the way in which the investment process occurs. In this paper we have argued that business angel research needs to address this changing context. We identify seven research priorities.

First, angel groups have drawn new types of investors into angel investing. However, our profile of angels as late middle-aged men with an entrepreneurial background who make a post-investment value-added contribution to their investee companies remains heavily influenced by research based on solo angels. A key priority, therefore, is research that provides a profile of the contemporary angel population, updating the ABC (attitudes, behaviours and characteristics) studies that have been a prominent feature of angel research (White and Dumay 2017).

Second, from a methodological perspective, the changing nature of business angels means that it may not be appropriate to base research on samples drawn from angel groups (particularly samples from a single group) and assume that the evidence is comparable to prior evidence based on solo angels or can be generalised across the business angel population.

Third, the implications of the emergence of angel groups on the supply of entrepreneurial finance needs to be assessed. This is generally regarded as a positive development, notably by attracting new investors and thereby expanding the supply of early stage finance. This is particularly significant in economically lagging regions which have a deficiency of experienced angel investors (a consequence of the low level of entrepreneurial activity in such regions). In such geographical environments angel groups provide a mechanism through which this expertise can leverage 'dumb money' from high net worth individuals which would otherwise be invested in less economically productive asset classes (Mason and Harrison, 2000).[5] However, concern has also been raised that the emergence of angels groups is resulting in the institutionalisation of angel investing, which is becoming more like venture capital funds or fund management companies, investing money from passive investors (Sohl, 2012). Indeed, some angel groups have established separate investment funds while others have evolved into fund managers (Gregson et al, 2013). This raises the question whether "the essence of angel investing being lost with the emergence of angel groups."[6]

[5] We are grateful to David Grahame, OBE, Executive Director, LINC Scotland for this point.
[6] This was a comment made by an angel investor in an interview with the lead author.

Fourth, there is a need to capture the heterogeneity of angel groups, documenting both the types of angels they recruit and the various organisational and operational models, and the implications that these different models have on their investment activity. There is also a need to understand the evolution of angel groups – their membership, deal flow (including referral sources), investment focus, investment processes, post-investment support and outcomes. And are there geographical differences in the organisation and investment approach of angel groups?

Fifth, there is a need to understand the different nature of the investment decision-making process and criteria of angel groups. Specifically, how much influence does the manager/gatekeeper have on the investment decision? What role do individual angels play in the investment decision. How is the investment decision made? Where are angel groups positioned on the market risk (the concern of venture capitalists) - agency risk (the concern of angels) spectrum (Fiet, 1995)?

Sixth, what are the implications of angel groups for entrepreneurial finance policy? Tax incentives are predicated on incentivising individual investors, but this may constrain the investment decision making and *modus operandi* of angel groups. More recently, co-investment funds – public sector investment vehicles that invest alongside angel groups – are emerging as a significant area for government intervention (Growth Analysis, 2013; Owen and Mason, 2017; Bileau et al, 2017; Harrison, 2018). However, there is only limited evidence on the variety of operating models of co-investment funds, approaches to evaluation (Murray et al, 2015) and impact.

And finally, what level of interaction do angel groups have with the growing number of other players in the entrepreneurial finance market, and what is the nature of such interactions? Specifically, to what extent are angel groups investing in businesses that have raised start-up finance from incubators and other providers of seed capital? How much interaction do angel groups have with venture capital funds? And, what effect is equity crowdfunding, a potentially disruptive market innovation, having on the nature and role of angel investing? Specifically, how are angel groups interacting with equity crowdfunding platforms? What investment models are emerging (Saloman, 2019)? How does co-investing between angel groups and other types of investor occur?

Angel investing has been and continues to be central to the development of an entrepreneurial economy across a range of geographies. As angel investing internationalises (Harrison 2017), especially into emerging economies (May and Liu 2016; Lo 2016), effective and relevant research and evidence-based policy making needs to be grounded in the new realities of business angel investing that we have described in this paper.

REFERENCES

Acs, Z. J. and Tarpley Jr., F. A., (1998)The angel capital electronic network (ACE-Net), *Journal of Banking and Finance*, 22(6-8), 793-797.

Avdeitchikova, S (2009) False expectations: reconsidering the role of informal venture capital in closing the regional equity gap, Entrepreneurship and Regional Development, 21 (2), 99-130.

Becker-Bease, J R and Sohl, J E (2011) The effect of gender diversity on angel group investment, *Entrepreneurship Theory and Practice*, 35 (4), 709-733.

Benjamin, G.A. and J. Magulis, J B (1996) *Finding Your Wings: How to Locate Private Investors to Fund Your Venture*. New York: John Wiley and Sons.

Bileau, J, Mason, C, Botelho, T and Sarkar, S (2017) Business angel investing in an era of austerity: the case of Portugal, *European Planning Studies*, 25 (9), 1516-1537.

Birmingham, C., Busenitz, L. W., & Arthurs, J. D. 2003. The escalation of commitment by venture capitalists in reinvestment decisions. *Venture Capital: An International Journal of Entrepreneurial Finance*, 5(3): 218-230.

Bonini, S, Capizzi, V, Valletta, M and Zocchi, P (2018) Angel network affiliation and business angels' investment practices, *Journal of Corporate Finance*, 50, 592-608.

Botelho, Tiago dos Santos (2017) *Angel Diversity: Studying The Decision-Making Criteria.* PhD thesis, University of Glasgow

Block, J H, Fisch, C O, Obschonka, M and Sander, P G (2019) A personality perspective on business angel syndication-, *Journal of Banking and Finance*, 100, 306-327.

Cardon, M S, Mitteness, C and Sudek, R (2018) Motivational cues and angel investing: interactions among enthusiasm, preparedness and commitment, *Entrepreneurship Theory and Practice*, 41 (6), 1057-1085.

Carpentier, C and Suret, J-M (2015) Angel group members' decision process and rejection criteria: A longitudinal analysis, *Journal of Business Venturing*, 30 (6), 808-821.

Cerullo, B. and Sommer, B., 2002, Helping Healthcare Entrepreneurs: A Case Study Of Angel Healthcare Investors, LLC. *Venture Capital: An International Journal of Entrepreneurial Finance*, 4: 325-330.

Croce, A, Tenca, F and Ughetto, E (2017) How business angel groups work: rejection criteria in investment evaluation, *International Small Business Journal*, 35 (4), 405-426.

Croce, A, Guerini, M and Ughetto, E (2018) Angel financing and the performance of high-tech start-ups, *Journal of Small Business Management*, 56(2), 208-228.

Devigne, D, Manigart, S and Wright, M (2016) Escalation of commitment in venture capital decision making: differentiating between domestic and international investors, *Journal of Business Venturing*, 31, pp 253 – 271

Drover W, Busenitz L, Matusik S, Townsend D, Anglin A, Dushnitsky G (2017) A Review and Road Map of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, and Accelerators, *Journal of Management* 43, 1820-1853

Edelman LF, Manolova TS and Brush CG (2017) Angel Investing: A Literature Review*,* *Foundations and Trends® in Entrepreneurship* 13, 265-439.

Fiet, J. O., 1995, Risk Avoidance Strategies In Venture Capital Markets. *Journal of Management Studies*, 32: 551-574.

Freear, J. and Wetzel, W. E., Jr., 1989, Equity Capital for Entrepreneurs. In R. H. Brockhaus, N. C. Churchill, J. A. Katz, B. A. Kirchoff, K. H. Vesper and W. E. Wetzel Jr. (eds) *Frontiers of Entrepreneurship Research* (Wellesley, MA: Babson College), 230-244.

Freear, J. and Wetzel, W.E. (1990) Who Bankrolls High-Tech Entrepreneurs? *Journal of Business Venturing*, 5, 77-89.

GP Capital (2004) *The Disconnect: What can be done to improve the working relationship between business angels and venture capitalists*. GP Capital: London.

Gregson, G, Mann, S and Harrison, R (2013) Business angel syndication and the evolution of risk capital in a small market economy: evidence from Scotland, *Management and Decision Economics*, 34 (2), 95-107.

Gregson, G, Bock, A J and Harrison, R T (2017) A review and simulation of business angel investment returns, *Venture Capital: An International Journal of Entrepreneurial Finance,* 19 (4), 285-311.

Growth Analysis (2013) *Business Angel, Coinvestment Funds and Policy Portfolios*, Tillväxtanalys: Swedish Agency for Growth Policy Analysis, Ostersund; Sweden

Guler, I (2007) Throwing good money after bad? Political and institutional influences on sequential decision-making in the venture capital industry, *Academic Science Quarterly*, 52 (2), 258-285.

Harrison RT (2017) The internationalisation of business angel investment activity: a review and research agenda, *Venture Capital: An International Journal of Entrepreneurial Finance*, 19, 119-12

Harrison R T (2018) Crossing the chasm: the role of co-investment funds in strengthening the regional business angel ecosystem, *Small Enterprise Research,* 25, 3-22

Harrison R T, Don G, Glancey-Johnson and Greig M (2010) The early stage risk capital market in Scotland since 2000 – issues of scale, characteristics and market efficiency, *Venture capital: An International Journal of Entrepreneurial* Finance 12, 211-239

Harrison, R. T. and Mason, C. M. (1996) Developing the informal venture capital market: a review of DTI's Informal Investment Demonstration Projects*, Regional Studies*, 30, 765-772.

Harrison R T and C M Mason (2000) Venture capital market complementarities: the links between business angels and venture capital funds in the UK, *Venture Capital: An International Journal of Entrepreneurial Finance*, 2 (3), 223-242

Harrison RT and Mason CM (2017) Backing the horse or the jockey? Due diligence, agency costs, information and the evaluation of risk by business angel investors, *International Review of Entrepreneurship* 15, 269-290

Harrison, R T and Mason, C M (2019) *Venture Capital* 20 years on: reflections on the evolution of a field, *Venture Capital: An International Journal of Entrepreneurial Finance,* 21 (1), 1-34.

Harrison, R T, Botelho, T and Mason, C M, (2016) Patient capital in entrepreneurial finance: a reassessment of the role of business angel investors, *Socio-Economic Review*, 14 (4), 669-681.

Harrison RT, Botelho T and Mason CM (2018) Women on the edge of a breakthrough? Towards a gendered theory of business angel investing, *Working Paper*

Harrison, RT, Mason, CM and Robson, P (2010). Determinants of long-distance investing by business angels in the UK. *Entrepreneurship and Regional Development*, 22: 113-137.

Hellmen, T F, Schure, P H and Vo, D H (2017) Angels And Venture Capitalists: Substitutes or Complements, Said School of Business, University of Oxford, Working Paper.

Jääskeläinen, M, Maula, M and Murray, G (2007) Profit distribution and compensation structures in publicly and privately funded hybrid venture capital funds, *Research Policy*, 36 (7), 913-929.

Kemp, K, Lironi, G and Shakeshaft, P (2017) *The Archangels' Share: The Story of the World's First Syndicate of Business Angels*, Salford: Saraband.

Kerr, W R, Lerner, J and Schoar, A (2014) The consequences of entrepreneurial finance: evidence from angel financing, *Review of Financial Studies*, 27, 20-55.

Lave, J and Wenger, E (1991) *Legitimate Peripheral Participation*. Cambridge: Cambridge University Press

Lerner, J, Schoar, A, Sokolinski, S and Wilson, K (2018) The globalisation of angel investments: evidence across countries, *Journal of Financial Economics*, 127(1), 1-20.

Lo J Y (ed) (2016) *Angel Financing in Asia Pacific*, Emerald

Madill, J. J., Haines, G. H. jr. and Riding, A. L. (2005) The role of angels in technology SMEs: a link to venture capital. *Venture Capital: An International Journal of Entrepreneurial Finance*, 7: 107-129.

Malcolm Watson Consulting (2016) Evaluation of the Scottish Co-Investment Fund (April 2009 – December 2013) Final Report to Scottish Enterprise. Glasgow; Scottish Enterprise. https://www.gov.scot/binaries/content/documents/govscot/publications/factsheet/2017/09/esif-evaluation-reports-2007-2013/documents/58c605ec-29c5-4974-8b30-c63844c60425/58c605ec-29c5-4974-8b30-c63844c60425/govscot:document/

Mason, C.M. (2006) 'Informal sources of venture finance', in S C Parker (ed) *The Life Cycle of Entrepreneurial Ventures*, New York: Springer: New York, pp.259-299.

Mason, C M (2007) The financing of early stage technology businesses: a re-assessment. Unpublished paper.

Mason, C (2016) Researching business angels: definitional and data challenges. In Landström, H and Mason, C (eds) *Handbook on Research on Venture Capital. Volume 3: Business Angels* (Edward Elgar: Cheltenham), pp 25-52.

Mason, C (2018) Financing entrepreneurial ventures, in R Blackburn, D de Clercq and J Heinonen (eds) *The Sage Handbook of Small Business and Entrepreneurship* (Sage: London), pp 321-349.

Mason, C (2019) *Report on Angel Investing Activity in Canada 2018*, National Angel Capital Organisation, Toronto, forthcoming.

Mason, C, Botelho, T (2014) The 2014 survey of business angel investing in the UK: A changing market place. Technical Report, Adam Smith Business School, University of Glasgow, Glasgow.

Mason, C and Botelho, T, (2016) The role of the exit in the initial screening of investment opportunities: the case of business angel syndicate gatekeepers, *International Small Business Journal*, 18 (4), 321-344.

Mason, C and Botelho, T (2017) *Comparing the Initial Screening of Investment Opportunities by Business Angel Group Gatekeepers and Individual Angels*. SSRN https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2941852

Mason, C and Botelho, T (2018) Early sources of funding (2): Business angels, in L Alemany and J Andreoli (eds) Entrepreneurial Finance: The Art And Science Of Growing Ventures, Cambridge University Press, pp 60-96.

Mason, C M and Harrison, R T (2000) Influences on the supply of informal venture capital in the UK: an exploratory study of investor attitude', *International Small Business Journal*, 18 (4) 11-28.

Mason, C.M., and Harrison, R.T. (2008) Measuring business angel investment activity in the United Kingdom: A review of potential data sources. *Venture Capital: An International Journal of Entrepreneurial Finance*, 10 (4). pp. 309-330

Mason, C, Harrison R and Botelho, T (2015) Business Angel Exits: Strategies and Processes. In Hussain, J G and Scott, J M (eds) *Research Handbook on Entrepreneurial Finance , Edward Elgar, Cheltenham.* pp, 102-124.

Mason, C, Botelho, T and Harrison, R (2016) 'The transformation of the business angel market: evidence and research implications', *Venture Capital: an international journal of entrepreneurial finance*. 18 (4), 321-344.

Mason, C, Botelho, T and Zygmunt, J (2017) Why business angels reject investment opportunities: it is personal? *International Small Business Journal*. 35 (5), 519-534

Mason, C, Botelho, T and Zygmunt, J (2017) Why business angels reject investment opportunities: it is personal? *International Small Business Journal*. 35 (5), 519-534

May, J., 2002, Structured Angel Groups in the USA: The Dinner Club Experience. *Venture Capital: An International Journal of Entrepreneurial Finance*, 4: 337-342.

May, J and Liu, M (2015) *Angels Without Borders: Trends and Policies Shaping Angel Investment Worldwide*, Singapore: World Scientific Publishing.

May, J. and O'Halloran, E. F., 2003, *Cutting Edge Practices in American Angel Investing*. The Darden School, Batten Institute, University of Virginia, Charlottesville, VA.

May, J. and Simmons, C., 2001, *Every Business Needs an Angel: Getting The Money You Need To Make Your Business Grow*. Crown Business, New York.

McCarthy, A, M, Schoorman, F D and Cooper, A C (1993) Reinvestment decisions by entrepreneurs: Rational decision-making or escalation of commitment? *Journal of Business Venturing*, 8 (1), 9-25.

Mitteness, C R, Baucus, M S and Sudek, R (2012a) Horse vs. jockey? How stage of funding process and industry experience affect the evaluations of angel investors, *Venture Capital: an international journal of entrepreneurial finance*, 14 (4), 242-267.

Mitteness, C R, Sudek, R and Baucus, M S (2012b) Angel investor characteristics that determine whether perceived passion leads to higher evaluations of funding potential, *Journal of Business Venturing*, 27, 592-606.

Mitteness, C R, DeLordy, R, Ahuja and Sudek, R (2016) Extending the role of similarity attraction in friendship and advice networks in angel groups, *Entrepreneurship Theory and Practice*, 40 (3), 627-655.

Murniek, C Y, Sudek, R and Wiltbank, R (2015) The role of personality in angel investing, *Entrepreneurship and Innovation*, 16 (1), 19-31.

Murray, G. C .(2007) Venture capital and government policy, in H Landström (ed) *Handbook of Research on Venture Capital*. Cheltenham: Edward Elgar, pp 113-151.

Murray, G, Cowling, M, Maula, M and Mason C (2015) *Recommended Methodologies for an Interim Evaluation of the Swedish Regional Co-Investment Scheme*. Final Report for Tillväxtanalys: Swedish Agency for Growth Policy Analysis, Ostersund; Sweden

Owen (Baldock), R and MASON, C, (2016) 'The role of Government co-investment funds in the supply of entrepreneurial finance: an assessment of the early operation of the UK Angel Co-Fund', *Environment and Planning C: Government and Policy*, 35 (3) 434-456.

Paul, S and Whittam, G (2010) Business angel syndicates: an exploratory study of gatekeepers, *Venture Capital: an international journal of entrepreneurial finance*, 12 (4), 241-256.

Payne, W. H. and Mccarty, M. J., 2002, The Anatomy of An Angel Investing Network: Tech Coast Angels. *Venture Capital: An International Journal of Entrepreneurial Finance*, 4: 31-336.

Politis, D (2008) Business angels and value-added: what do we know and where do we go? *Venture Capital: An International Journal of Entrepreneurial Finance,* 10, 127-147.

Politis, D. (2016). Business angels as smart investors: a systematic review of the evidence, in H. Landström and C. Mason (eds) *Handbook of Research on Business Angels*, Cheltenham: 147-175. Edward Elgar

Preston, S L (2007) *Angel Financing for Entrepreneurs*, San Francisco: Jossey-Bass

Saloman, V (2019) Evolving crowdfunding models. In Landström, H, Parhankangas, A and Mason, C (eds) *Handbook on Research on Crowdfunding*, Edward Elgar: Cheltenham, chapter 13.

Shiller, Robert J., 1995, Conversation, information and herd behavior, *American Economic Review*, 85, 181-185.

Sohl, J (2007) The organization of the informal venture capital market, in H Landström (ed) *Handbook of Research on Venture Capital*, Edward Elgar: Cheltenham. pp 347-368

Sohl, J (2012) The changing nature of the angel market. In H Landström and C Mason (eds) *The Handbook of Research on Venture Capital: Volume II*. Edward Elgar: Cheltenham, pp 17-41.

Staw, B. M. (1976) Knee-deep in the big muddy: a study of escalating commitment to a chosen course of action, *Organizational Behavior and Human Performance*. 16 (1): 27–44.

Sudek, R (2006) Angel investment criteria, *Journal of Small Business Strategy*, 17 (2-3), 89-103.

Tenca, F, Croce, A and Ughetto, E (2018) Business angels research in entrepreneurial finance: a literature review and research agenda, *Journal of Economic Surveys*, 32 (5), 1384-1413.

Wallmeroth J, Wirtz P and Groh AP (2018), "Venture Capital, Angel Financing, and Crowdfunding of Entrepreneurial Ventures: A Literature Review", *Foundations and Trends® in Entrepreneurship* 14, 1-129.

Wenger, E (2000) *Communities of Practice*. New York: Cambridge University Press

Wetzel, W E (1981) Informal Risk Capital In New England. In K H Vesper (ed.) *Frontiers of Entrepreneurship Research 1981*, Babson College, Wellesley, MA., pp. 217-245.

White BA and Dumay J (2017) Business angels: a research review and new agenda, *Venture Capital: An International Journal of Entrepreneurial Finance* 19, 183-216